DOCUMENT RESUME

ED 158 836 PS 009 539

AUTHOR Sueoka, Sarah; And Others
TITLE Training of Classroom Relevant Behaviors with the "Staats Box." Technical Report #9.
INSTITUTION Kamehameha Schools, Honolulu, Hawaii. Kamehameha Early Education Project.
SPONS AGENCY California Univ., Los Angeles. Mental Retardation Research Center.; Hawaii State Dept. of Education, Honolulu.
PUB DATE [74]
NOTE 15p.; For related documents, see PS 009 533-538 and PS 009 540-573

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Anti Social Behavior; *Behavior Change; Case Studies; *Classroom Observation Techniques; Early Childhood Education; Hawaiians; Hyperactivity; *Kindergarten Children; *Maladjustment; Reinforcement; Research; Teacher Role; *Verbal Operant Conditioning
IDENTIFIERS Hawaii; *Kamehameha Early Education Program

ABSTRACT

This case study of a kindergarten boy in the Kamehameha Early Education Program (KEEP) suggests that specific operant training in school-relevant behaviors can facilitate classroom adjustment if the training is coordinated with the regular classroom teacher. The subject, considered unmanageable, hyperactive, and aggressive by the staff at his preschool, enrolled in the KEEP kindergarten and was given simple operant training in a "Staats Box" apparatus. In the Staats Box technique, the child works alone with the teacher outside the classroom. He sits next to a partition containing a slot, through which the teacher (who is visible to him) drops marbles into a jar at appropriate intervals. The target behaviors--sitting, attending, raising hand and making correct verbal responses--were explained to the subject, who was rewarded with a marble each time he responded appropriately to the teacher's questions. Materials used in the training were closely coordinated with the ongoing language experience in the regular classroom. The subject was observed for 20 minutes daily for 10 days prior to the Staats Box sessions, through six days of the training itself, and eight days subsequent to the training. Results indicate that frequencies of the target behaviors in the subject's regular kindergarten class increased both during Staats Box training and after the end of the training, and that the boy successfully adapted to the regular classroom. (CM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED158836

Technical Reports

of

The Kamehameha Early Education Program

a research and development program established and funded by

The Kamehameha Schools/Bernice P. Bishop Estate

Ronald Gallimore, Roland G. Tharp & Gisela E. Speidel,
General Editors

Ellen Antill
Production Editor

Technical Report #9

The cooperation of the State of Hawaii Department of Education is gratefully acknowledged, as is the support and resources made available by the Sociobehavioral Research Group, MRRC, University of California, Los Angeles.

The opinions expressed herein do not necessarily reflect the position, policy or have the endorsement of The Kamehameha Schools/Bernice P. Bishop Estate, or of the editors.

Published by The Kamehameha Early Education Project, 1850 Makuakane Street, Honolulu, HI 96817

All rights reserved. No parts of this report may be reproduced in any form or by any means without the prior written permission of The Kamehameha Schools/Bernice P. Bishop Estate.

PS 009539

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Kim C. M. Sloat
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

The Kamehameha Early Education Program

The Kamehameha Early Education Program (KEEP) is a research and development program of The Kamehameha Schools/Bernice P. Bishop Estate. The mission of KEEP is the development, demonstration, and dissemination of methods for improving the education of Hawaiian and Part-Hawaiian children. These activities are conducted at the Ka Na'i Pono Research and Demonstration School, and in public classrooms in cooperation with the State Department of Education. KEEP projects and activities involve many aspects of the educational process, including teacher training, curriculum development, and child motivation, language, and cognition. More detailed descriptions of KEEP's history and operations are presented in Technical Reports #1-4.

Abstract

K, a kindergarten boy, considered unmanageable by his teachers, was given simple operant training in a "Staats Box" apparatus. The target behaviors were 1) sitting, 2) attending, 3) raising hand, and 4) appropriate verbal responses. Frequencies of these behaviors in his regular kindergarten class increased both during the Staats Box training, and after the training's end. The boy successfully adapted to a regular classroom.

This report demonstrates that specific operant training in school-relevant behaviors can facilitate classroom adjustment, if the training is coordinated with the regular classroom teacher.

Technical Report #9

Training of Classroom Relevant Behaviors with the "Staats Box"

Sarah Sueoka Gisela E. Speidel Ronald Gallimore

In general, the KEEP staff work with children in the regular classroom secting. However, in some cases it has proven useful to provide special instruction to individual children outside the regular classroom. The case study reported here is an example of one approach we have found to be successful in these special cases.

In this instance, the child, K, enrolled in the KEEP kindergarten after having attended a local preschool. His tested IQ in September was 65 (Full Scale, WPPSI); before enrolling at KEEP, he had already accumulated a substantial psychiatric and neurological file. The preschool that K attended considered him unmanageable, hyperactive, and extremely aggressive. His behavior at KEEP during the first weeks of the school year confirmed his school record. Classroom observation indicated low or zero rates of sitting, attending, raising hand, and making appropriate verbal responses during large group instruction. During instruction, he often rolled on the floor, disturbing others, or shouted out irrelevant remarks. It was accurate to describe the boy as academically and socially unadapted to the classroom situation.

Since his rate of appropriate behavior was so low and consequently, could seldom be reinforced, a decision was made to first increase the frequency of selected behaviors by special training outside the classroom. A technique was selected that has been developed by Arthur Staats of the University of Hawaii; it is usually called a "Staats Box." The child works alone with an

adult (in this case a teacher) outside the classroom. The child sits next to a partition which has a slot from which marbles drop, and a jar for placement of the marbles. The teacher sits in such a way that the child can see her, and so she can reach behind the partition to drop marbles into the slot at appropriate intervals.

In this case, the Staats Box approach was used to increase K's rate of sitting, attending, hand raising, and appropriate verbal responses with the expectation that increases in the frequency of these behaviors achieved in the special room would generalize to the classroom.

Method

The special training was conducted in a room set up specifically for such purposes. The Staats Box was placed at floor level, with the subject sitting at one end of the box and with the experimenter (E) sitting or standing directly at the opposite end.

Preintervention Orientation Session

Initial instructions, given to orient K to the situation, entailed explaining, modelling, and rehearsing with him the procedures he was expected to follow during the period of intervention. The experimental room was introduced as a place where daily he would learn to do things that would help him become a better student. He was told that the Staats Box and other materials would help him toward this end.

E described and modelled for K the four target behaviors--sitting, attending, raising hand, making correct verbal response. E then prompted him to perform these behaviors with cues such as "let's sit and get ready," "look at me," "raise your hand if you can name this picture." Immediately after an appropriate response, a marble was delivered with a verbal praise

and a precise statement of the contingency, such as "you get a marble because you are sitting up."

After rehearsal of the four behaviors, with token reinforcement, K's attention was directed to a display of rewards (candy, toys, trinkets) on a board from which he was asked to make a choice. E then explained that all the marbles earned would be dropped into the jar after the end of each session and that he could choose a reward to keep from the display board as soon as the jar was filled.

The orientation session continued for 15 minutes. Each of 20 trials began with appropriate cues, followed immediately by token reinforcement, verbal praise, and restatement by E of the appropriate behavior. At the end of this session, K was directed to gather the marbles and drop them into the jar. This ended the preintervention orientation to the procedure.

Intervention Procedure

On the first day of the six day intervention, all four behaviors were rehearsed sequentially with K. The intervention program formally began with cues for the four appropriate behaviors. When K failed to perform an appropriate response during the session, he was simply told, "no marble because you are not sitting up"--E always specified the inappropriate behavior.

Materials used in the training were closely coordinated with the on-going language experiences in the regular classroom, in this instance, 12 Peabody Vocabulary cards. The following levels of responses were employed: 1) able to name pictures; 2) able to name pictures in a sentence; 3) able to describe in sentences the action portrayed in a picture. The criterion for phasing out a level was 20 successful verbal responses.

Since K had such a low rate of all four target behaviors, the training used the method of fading. That is, K was first reinforced after each of the

four target behaviors (sitting, attending, raising hand, and appropriate verbal response) were separately performed. After K had successfully performed each of the four behaviors in 10 successive trials, the criterion for reinforcement was increased. Now, he was reinforced only if he was sitting and attending simultaneously; at this point, any instances of hand raising and appropriate verbal response were also reinforced. After criterion was met on the second phase, a third phase was introduced which required that he simultaneously sit, attend, and raise his hand before he would be reinforced. In the third phase, he was still reinforced for any instances of appropriate verbal response. In the final phase, he was reinforced only after he simultaneously performed all four target behaviors. Thus, as K showed improvement, the criterion he had to achieve to earn a marble was gradually increased in accordance with his capacity to perform. In all cases, the reinforcers were faded out (more behavior must be performed before the reinforcer would be dispensed) after K successfully performed each level of the four phases for 10 successive trials.

Staats Box Observation Procedure

A code definition of appropriate behaviors targeted in the training was established with the aid of the teacher during whose regular classroom teaching sessions K's behaviors were observed. The following were the definitions used: S= sitting in an upright position in the circle; A= attending, looking toward teacher during instruction without talking; listening to another child responding without talking; RH= raising hand to indicate a wish to make a verbal response; CR= correct response to stimulus presented. These codes were used in recording the frequency of K's responses during the training sessions. The performance of the four behaviors constituted a trial, each trial beginning with the presentation of a Peabody Picture card. There were

20 trials on each of the six days of intervention.

Observations and Data Gathering During Classroom Language Time

An observation coding scheme similar to that used in the Staats Box sessions was devised for use in the regular classroom. The code included definitions of the four target behaviors (sitting, attending, hand raising, and appropriate verbal response). Two independent observers established the reliability of the observations for each of the four behavioral categories. The percent agreement between the two observers ranged between 90 and 92 percent for all behaviors; percent agreement was computed by dividing observer agreements by the total number of observation intervals.

Observations were collected in the classroom for ten days (described as Baseline 1) prior to the preintervention orientation session and the Staats Box sessions. The boy was observed 20 minutes each of the 10 days, with recordings made at 30-second intervals. At the end of each interval, the observer noted whether any of the target behaviors had occurred by recording "yes" or "no." Thus, each day each of the four behaviors could have been recorded a maximum of 40 times. Such a time sampling approach reduces the observation task to a manageable, reliable and valid method of assessing behavior frequencies.

Classroom observations were continued in the same manner during the preintervention orientation session and through the six days of Staats Box training. This phase is described as the Intervention phase.

After terminating the Staats Box sessions, classroom observations continued for one day, and after K returned from an extended absence (six days) from school, observations were resumed for another week. This period is denoted Baseline 2, and provides an indication of the posttraining effects of the Staats Box sessions.

Results

Analysis of results[1] shows that K exhibited highly appropriate behavior in the Staats Box sessions during the six days of intervention (see Figure 1).

Figure 2 shows the day to day frequency of regular classroom sitting and attending for Baseline 1, Intervention, and Baseline 2.

Both behaviors fluctuated greatly during the three phases. K's sitting increased only minimally from Baseline 1 to Intervention. Attending showed a larger increase from an average of 40% to 65% of the observations. During Baseline 2, when Intervention with the Staats Box had terminated, sitting and attending continued to increase somewhat.

Figure 3 shows that during Baseline 1, K displayed zero classroom rates of hand raising and appropriate verbal response. However, during Intervention K raised his hand on the average seven times and produced an average of two appropriate verbal responses. During Baseline 2, K raised his hand 17 times on the average and gave four correct responses.

Discussion

After training, K began to perform all four behaviors in sequence--sitting, attending, raising hand, and making appropriate verbal responses--in the Staats Box sessions. Moreover, the averages presented in Figures 2 and 3 indicate generalization of these training effects to the classroom itself. Intervention had a dramatic effect on hand raising and appropriate verbal response. During the ten Baseline 1 observations, the rate of these two behaviors was zero. After Intervention, however, the frequency of these behaviors increased markedly.

---

[1]Data from the pre-experimental orientation session were excluded.

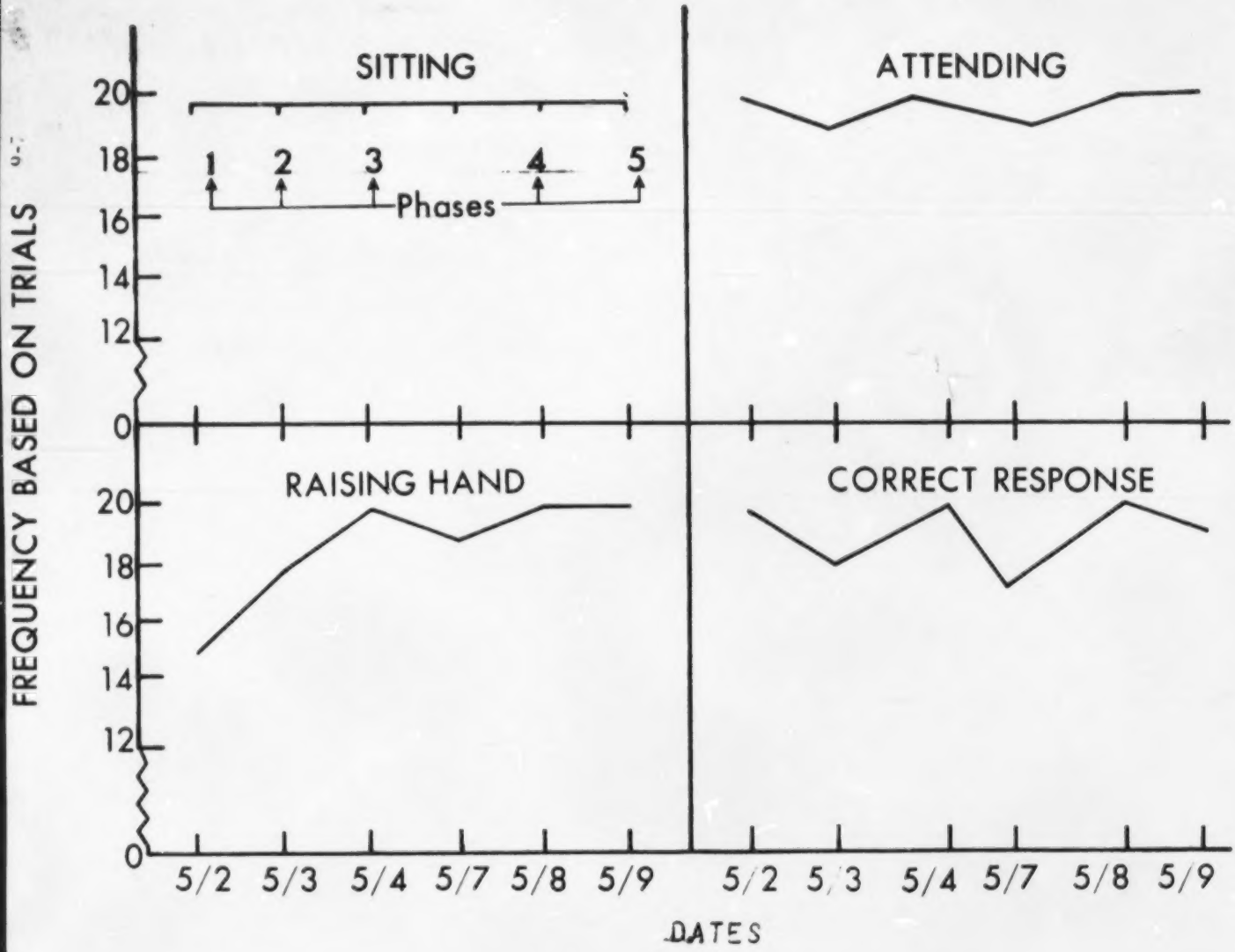
SITTING
ATTENDING
RAISING HAND
CORRECT RESPONSE
1 2 3 4 5
Phases
20
18
16
14
12
0
FREQUENCY BASED ON TRIALS
5/2 5/3 5/4 5/7 5/8 5/9
5/2 5/3 5/4 5/7 5/8 5/9
DATES

Figure 1

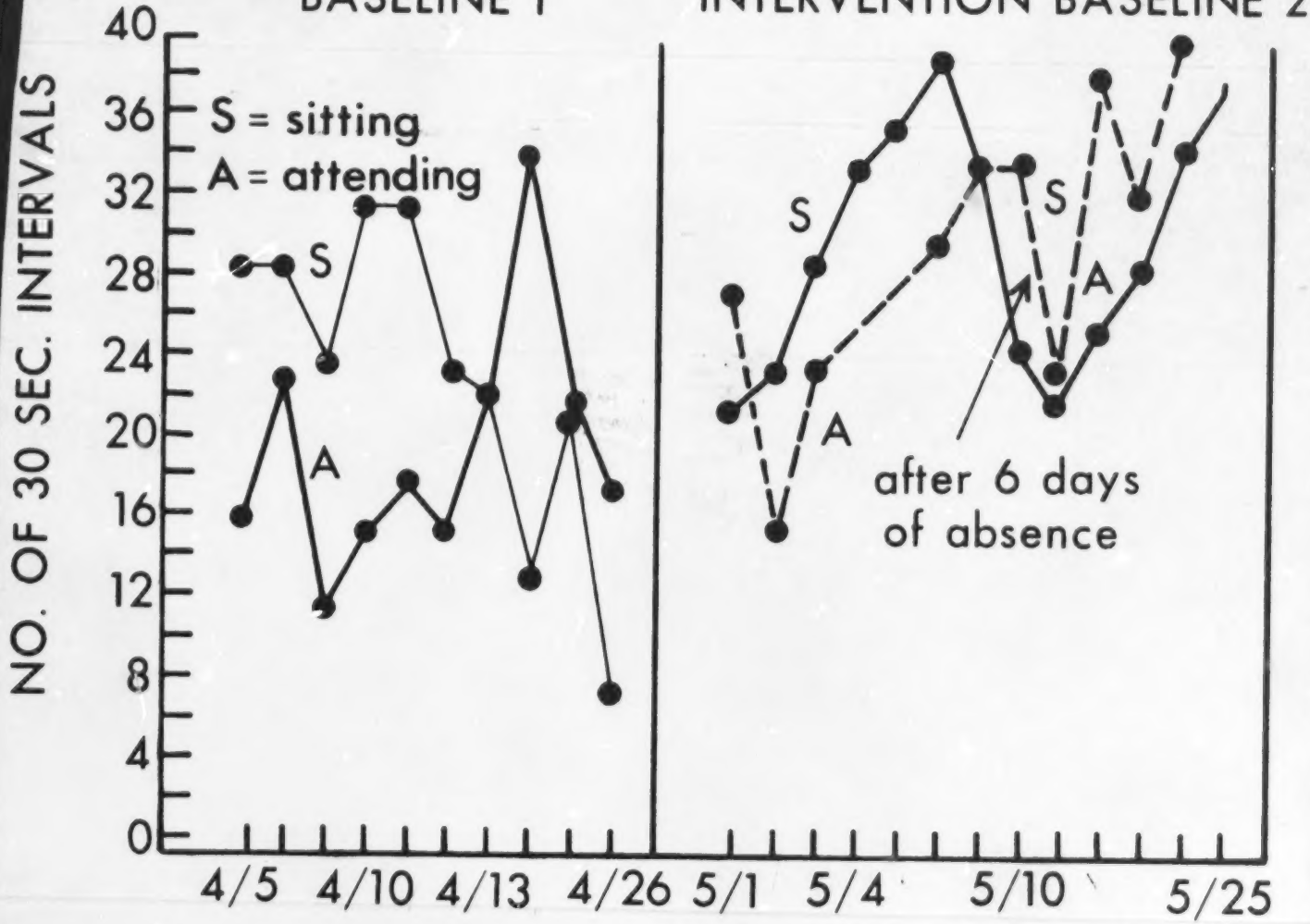
BASELINE 1
INTERVENTION BASELINE 2
NO. OF 30 SEC. INTERVALS
40
36
32
28
24
20
16
12
8
4
0
S = sitting
A = attending
S
A
S
A
S
A
after 6 days
of absence
4/5
4/10
4/13
4/26
5/1
5/4
5/10
5/25
DATES

Figure 2

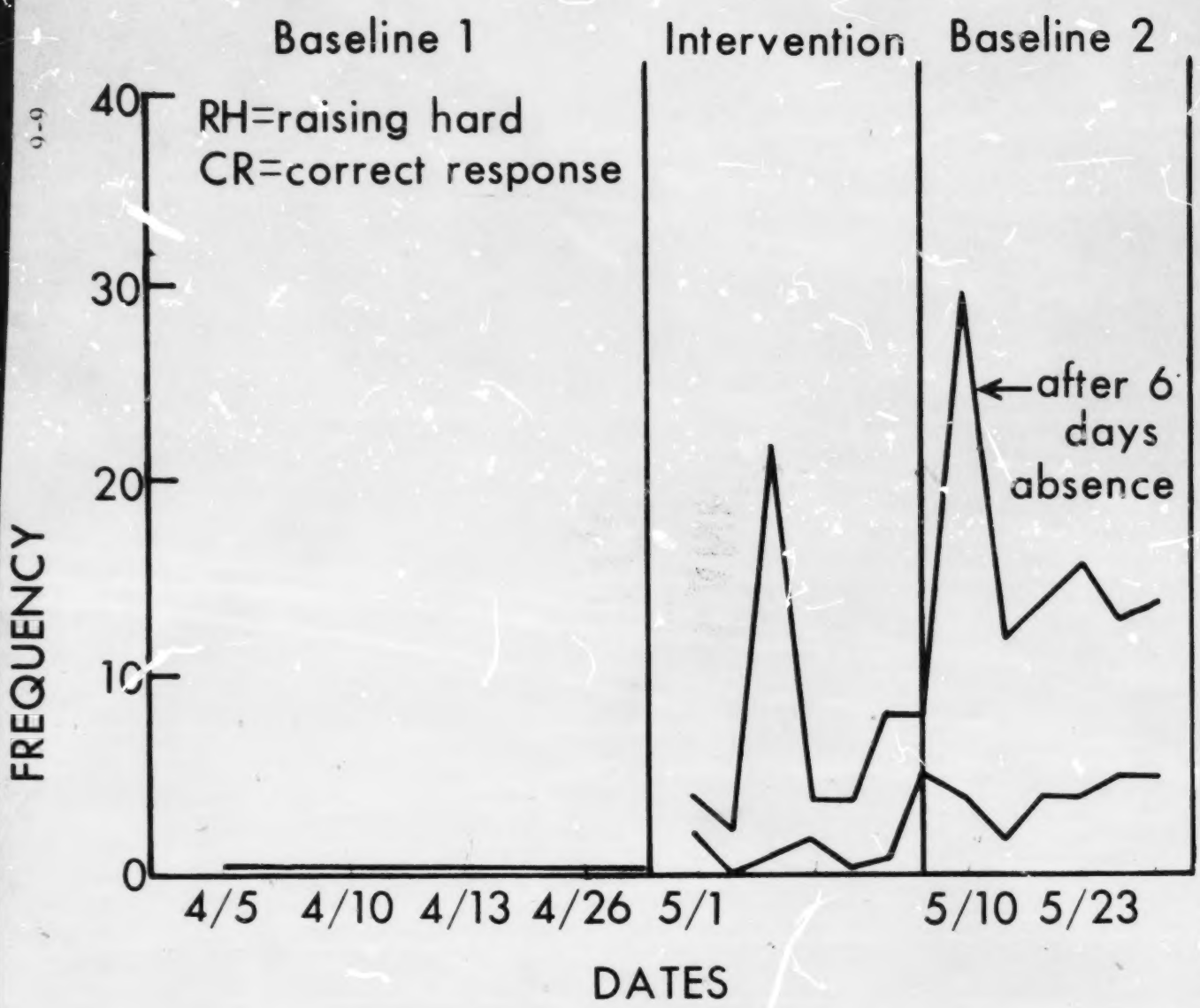
Baseline 1
Intervention
Baseline 2
RH=raising hard
CR=correct response
40
30
20
10
0
FREQUENCY
after 6 days absence
4/5
4/10
4/13
4/26
5/1
5/10
5/23
DATES

Figure 3

Furthermore, the completion of training did not end K's improvement. There was a continued trend toward improvement during Baseline 2.

The method of fading, which in effect demanded increasingly longer sequences of appropriate behaviors from K each day before he was reinforced, did not seem to disrupt his progress. Indeed, given his general pattern of behavior in the classroom, he showed quite remarkable improvemnt for a boy with an otherwise unpromising history.

A good deal of the improvement in the classroom can be explained by the gradual integration of K into the normal reinforcement contingencies imposed at KEEP. Since KEEP staff focus on high rates of contingent social reinforcement, any child who produces some good behavior will receive praise and other forms of social reinforcement. Before the special Staats Rox training, K's rate of appropriate behavior was so low that he rarely was praised or attended to by the classroom teacher. As K began to display appropriate behaviors in the classroom, he was reinforced by his regular teacher. Without this element, it is likely that special out-of-class training would have been of minimal value. In most cases, it will be necessary for the regular classroom teacher to carefully use contingent reinforcement, especially for children with low rates of sitting, attending, etc.

It is important to emphasize that little attention was given in the intervention planning to the origins of K's problematic behavior. This reflects the general KEEP approach to problem behavior. We do not discount the role of extraschool and individual child factors; rather we believe that our efforts are best directed to the immediate school situation over which we have maximum influence and responsibility. What does the child need to learn to function? What experiences or changes in his every day class environment will foster a better adjustment and improved performance?

We find little value in procedures that lead to a label such as learning disabled, emotionally disturbed, and the like. In addition to providing little program guidance, they "solve" problems by attributing them to situations over which school personnel have little or no control.

A boy with K's history and classroom problems often gets labelled early and faces a bleak educational future. "Special services" often approach such problem cases with insufficient coordination with the classroom teacher. A major feature of this case is the carefully built relationship between the behaviors fostered in the special training and those required for kindergarten adjustment. In effect, the training in K's case simply got him on the "track" in his regular classroom, which fortunately was characterized by teacher attention to the details of classroom management and use of social reinforcement. Children such as K can be helped, but it requires more than good intentions.

From a teacher's point of view, the important elements of this case are: (1) that the more is known about a child's specific behaviors and the classroom setting, the more appropriate the design of an intervention is likely to be to achieve the desired generalization; and (2) that the need for coordination with the regular classroom teacher before, during, and after intervention is of paramount importance. Often, discussions with the teacher involving behavioral goals for the child are vital so that the behavioral demands made of him in the classroom can be duplicated, as closely as possible, in the special training setting. Further research on other children, as well as on the problems of training teachers to use special approaches, is indicated.